

**REMARKS/ARGUMENTS**

Favorable reconsideration of this application is respectfully requested.

Claims 1, 12, 23, 34, and 35 are pending in this application. Claims 2-11, 13-22, and 24-33 were previously canceled without prejudice or disclaimer. Claim 35 has been added to describe that the function of determining if the image is a non-natural image or a natural image, or that it cannot be determined whether the image is either a natural image or a non-natural image, is “based in part on the number of discrete luminance values appearing in the histogram of discrete luminance values being less than a predetermined value.” This determination if the image is non-natural image or a natural image, or that it cannot be determined whether the image is either a natural image or a non-natural image “based in part on the number of discrete luminance values appearing in the histogram of discrete luminance values being less than a predetermined value” is taught at least relative to page 42, lines 5-12. Accordingly, no new matter has been introduced.

The outstanding Office Action presents a rejection of Claims 1, 12, 23, and 34 under 35 U.S.C. §103(a) as being unpatentable over Tanaka et al. (U.S. Patent No. 5,953,463, herein “Tanaka”) in view of Athitsos et al. article (“Distinguishing Photographs and Graphics on the World Wide Web,” herein “Athitsos”), in view of Sekine et al. (U.S. Patent No. 5,754,710, herein “Sekine”) and Leak (5,670,986).

As noted in the last response, independent Claims 1, 12, and 23, all require acquiring “a histogram of a number of discrete luminance values calculated by linearly combining color component brightness values of at least each of the reference pixels,” and then determining “if the image is a non-natural image or a natural image, or that it cannot be determined whether the image is either a natural image or a non-natural image, based on the number of discrete luminance values appearing in the histogram of discrete luminance values (emphasis added). New independent Claim 35 requires determining if the image is a non-natural image

or a natural image, or that it cannot be determined whether the image is either a natural image or a non-natural image, is “based in part on the number of discrete luminance values appearing in the histogram of discrete luminance values being less than a predetermined value” (emphasis added).

As also noted in the last response, there must first be a teaching appearing in one of the applied references that such a histogram “of discrete luminance values calculated by linearly combining color component brightness values” (emphasis added) is to be acquired before it can be asserted that a *prima facie* case of obviousness has been established.

The outstanding Action (in the fifth full paragraph on page 4) incorrectly relies on newly cited Leak to somehow teaching that a histogram of color values should be modified to be a histogram “of discrete luminance values calculated by linearly combining color component brightness values” (emphasis added) based on abstracting a teaching of Leak (at col. 1, line 58 to col. 2, line 2) as to a known use of a color lookup table (CLUT) that has certain advantages but has nothing to do with the Leak noted **ALTERNATIVE** of representing images in grey scale at col. 2, lines 3-18 that requires red, blue, and green to have values of “equal intensities.”

Furthermore, the actual invention taught by Leak is that a lookup table being addressed by translating color information, such as RGB color information, into a luminance value, which is then used to access the table. See the Leak abstract and col. 6, lines 30-46 that note:

As shown in FIG. 4a, the preferred embodiment utilizes a luminance value transformation function 409 to convert a three 8 bit RGB values 305, 306 and 307 into one 8 bit luminance value. This function multiplies the red component 305 (8 bits) of the 24 bit RGB value by 5, the green value 306 by 9 and the blue value 307 by 2 dividing the sum of the three results by 16. It can be appreciated by one skilled in the art that these arithmetic operations may be accomplished with little CPU overhead by combinations of register shift operations and additions instead of multiplies and divides. This transformation results in an 8 bit luminance value provided on line 410 which has  $2^8$  or 256 possibilities. The result of this transformation function may then be used as an input into an

abbreviated inverse luminance table (ILT) 411. Use of a luminance value transformation function for each color requires that the ILT 411 only have an address space of  $2^8$  or 256 entries of four bits each.

As note in *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000), “[reference] statements cannot be viewed in the abstract. Rather they must be considered in the context of the teaching of the entire reference.” This is not new law, not *In re Gordon*, 221, USPQ 1125, 1127 (Fed. Cir. 1984) requiring “a fair reading of the prior art reference as a whole;” *In re Wesslau*, 147 USPQ 391, 393 (CCPA 1965) noting that “it is impermissible within the framework of §103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art;” and *In re Ehrreich*, 590 F.2d 902, 200 USPQ 504 (CCPA, 1979) noting that one “must consider the entirety of the disclosure made by the references, and avoid combining them indiscriminately.”

Also, the Athios teaching of item 4 as to metrics that starts at page 12 is to look at the number of colors, the most frequently occurring color in the image and the nearest neighbor metric. Assuming that this is reduced to just counting the number of the different colors as suggested in the second paragraph of page 4 of the outstanding action, one cannot count the number of different colors if the colors are mixed together and converted to luminance values.

Further, the relied on teachings of col. 2, lines 3-18 of Leak are set forth as a known alternative to the col. 1, line 58 to col. 2, line 3 discussion of a known use of a frame buffer having less than 24 bits of color information per pixel and these alternative are not suggested to be used together or with the actual invention taught by Leak.

Moreover, even if it could be shown that either Leak or one or all of Tanaka, Athitso, and Sekine actually taught this claimed feature of “histogram acquisition that acquires a

histogram of a number of discrete luminance values calculated by linearly combining color component brightness values of at least each of the reference pixels (emphasis added), it would also have to be shown that these references somehow also teach determining “if the image is a non-natural image or a natural image, or that it cannot be determined whether the image is either a natural image or a non-natural image, base on the number of discrete luminance values appearing in the histogram of discrete luminance value” (emphasis added), which is not the counting the number of distinct colors suggested by Athitsos.

The outstanding Action asserts that Tanaka teaches a function of determining if the image is a non-natural image or a natural image or that it cannot be determined whether “the image is either a natural image nor [now recited as “or” to be grammatically correct] a non-natural image at col. 9, lines 7-16 at page 3 of the outstanding Action. However, it is clear that the discussion of possible ways of detecting “characters, photographs, and mesh dots” discussed at col. 9, lines 7-16 (and more completely discussed at col. 9, line 17 to col. 11, line 50) of Tanaka do not teach or suggest the presently claimed acquiring of “a histogram of a number of discrete luminance values,” much less that such “discrete luminance values” are “calculated by linearly combining color component brightness values of at least each of the reference pixels” (emphasis added).

Similarly, no such acquiring of “a histogram of a number of discrete luminance values calculated by linearly combining color component brightness values of at least each of the reference pixels” (emphasis added) is taught or suggested by the Athitsos article, Sekine or Leak.

In this regard, Sekine is only concerned with converting an image of a first resolution to a second resolution as noted in the Abstract and “Field of the Invention” statement at col. 1, lines 10-13. Thus, Sekine is not concerned with establishing any criteria at all to determined if an image is a non-natural image or a natural image, much less with a criteria

that will also indicate that it cannot be determined whether the image is either a natural image or a non-natural image.

As noted in the last response, the Athitsos article is concerned with the development of “an automated system that classifies Web images as photographs or graphics” that is “based on statistical observations about the image contents of the two types.” The Athitsos article first teaches that the differences between photographs and graphics noted in Section 3.2 that bridges page 11 and 12 is based on considering pure photographs and only computer generated pure graphics, not mixed images containing both and not hand drawings, see section 3.1 on page 11. It is this context that the Athitsos article sets forth the basic differences between pure photographs and pure computer graphics noted in Section 3.2 that are noted to be “color transitions” based on “different patterns” in the pure photographs and pure computer graphics of concern, sharper edges that generally appear in the computer generated graphics of concern as compared to pure photographs that have blurred boundaries between objects and color transition boundaries that are due to light variations and shading that do not correspond to boundaries between objects, certain highly saturated colors that are much more likely to appear in computer graphics than in pure photographs, the use of fewer colors in computer graphics as compared to pure photographs, and the different shapes and sizes associated with computer generated graphics as compared to pure photographs. These “differences” are then translated into the “Image Metrics” of section 4 that are combined using decision trees as explained in sections 5.1-5.3. None of these teachings even remotely suggest acquiring “a histogram of a number of discrete luminance values,” as noted above. The number of discrete colors to be counted as suggested by the Athitsos counting metric would be lost if discrete colors were combined to form luminance data as taught by Leak. These discrete colors of Athitsos are in no way suggested to be associated with any reference pixels and there is thus also nothing in any of the references relied on that teaches or suggests

that discrete values of the required “histogram” are to be calculated by linearly combining color component brightness values of at least each of the reference pixels: (emphasis added).

Thus, as none of Athitsos, Sekine, and/or Leak cure the above-noted deficiencies of Tanaka, it is respectfully submitted that amended independent Claims 1, 12, and 23 all patentably define over Tanaka, Athitsos, Sekine, and/or Leak whether these references are considered alone or together in any proper combination.

In this last regard, the combination of reference teachings proposed in the outstanding Action is once again noted to be clearly improper as the modification of the region segmentation data of value X to perform as noted at col. 3, lines 11-21, of Tanaka would have to undergo a complete redesign and operate using a different principle if the actual Athitsos teaching of using the tree combination of metric scores approach and the Sekine pattern matching were to be somehow be incorporated with the use of the Leak transformed luminance value used as an input into an abbreviated inverse luminance table. This violates established precedent, see MPEP §2143.01 VI as follows:

**VI. THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE**

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facies* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) (Clams were directed to an oil seal comprising a bore engaging portion with outwardly biased resilient spring fingers inserted in a resilient sealing member. The primary reference relied upon in a rejection based on a combination of references disclosed an oil seal wherein the bore engaging portion was reinforced by a cylindrical sheet metal casing. Patentee taught the device required rigidity for operation, whereas the claimed invention required resiliency. The Court reversed the rejection holding the “suggested redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.” 270 F.2d at 813, 123 USPQ at 352.).

Accordingly, the outstanding rejection of Claims 1, 12, and 23 under 35 U.S.C.

§103(a) as being unpatentable over Tanaka in view of the Athitsos in further in view of

Sekine and Leak is traversed for the reasons stated above and the withdrawal of this rejection is respectfully requested.

As the subject matter of dependent Claim 34 includes the subject matter of amended independent Claim 1, the rejection thereof based upon any or all of the above-noted references is traversed for the reasons noted above as to the parent independent claim. In addition, any such rejection is further traversed because none of the applied references teach or suggest the additional features of Claim 34.

New independent Claim 35 requires not only that a histogram of a number of discrete luminance values calculated by linearly combining color component brightness values of at least each of the reference pixels be acquired, it further requires that the determination if the image is anon-natural image or a natural image, or that it cannot be determined whether the image is either a natural image or a non-natural image, must be "based in part on the number of discrete luminance values appearing in the histogram of discrete luminance values being less than a predetermined value." Once again, none of Tanaka, Athitsos, Sekine, and/or Leak, whether these references are considered alone or together in any proper combination, teach or suggest such subject matter.

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Reply to Office Action of 10/17/2007

As no further issues are believed to remain outstanding in the present application, it is believed that this application is clearly in condition for formal allowance and an early and favorable action to that effect is, therefore, respectfully requested.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'Gregory J. Maier', is written over a horizontal line.

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